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TYPICAL BEEF FEEDLOT AND BACKGROUND DIETS

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Balancing the cost of feed with the rate of gain is critical to improving the margins in your operation. The key is to ensure the ration is balanced to achieve your target rate of gain. The sample feed rations shown will help balance costs with the nutritional needs of the animal.

TYPICAL BACKGROUND DIETS FOR CALVES

Producers retaining calves in the fall and backgrounding them on farm should develop a ration that will meet the requirements of the calves and ensure a reasonable rate of gain while controlling cost. Listed below are a number of different rations utilizing common feed ingredients found on farm or as close as the local feed store. These rations were developed to achieve 2 lb/day gain. Testing forages is key to ensuring calves are receiving the appropriate amount of grain and supplementation. Unbalanced rations may result in lower average daily gain and actually increase feed cost/lb of gain. In extreme cold weather, rations may need to be adjusted.

Assumptions

- Average daily gain (ADG): approximately 2 lb/day
- Average weight:
  700 lb (starting weight 500 lb, end weight 900 lb)
  (318 kg (starting weight 227 kg, end weight 408 kg))
- 200 days on feed
- Dry matter (DM) intake: approximately 2.5% of body weight

Sample Ration #1 — Background Diets for Calves

	kg fed/day	lb fed/day
Dry Hay — 12% protein	5.5	12
Grain corn	2.8	6
Supplement	0.5	1.1
Premix	.03	1 oz
Feed conversion (DM basis)		8.64 lb

A 200-day feeding period for sample ration #1 would require about 1 t of hay and 1/2 t of grain corn per calf.

Sample Ration #2 — Background Diets for Calves

	kg fed/day	lb fed/day
Dry hay — 15% protein	5.2	11.5
Mixed grain	3.5	7.7
Supplement	0	0
Premix	.06	2 oz
Feed conversion (DM basis)		8.62 lb

A 200-day feeding period for sample ration #2 would require about 1 t of hay and 2/3 t of mixed grain per calf.

Sample Ration #3 — Background Diets for Calves

	kg fed/day	lb fed/day
Dry hay — 15% protein	2.5	5.5
Corn silage	8.5	18.7
Corn screenings	2.5	5.5
Supplement	0.5	1.1
Premix	.03	1 oz
Feed conversion (DM basis)		8.66 lb

A 200-day feeding period for sample ration #3 would require about 1/2 t of hay, 1 1/2 t of corn silage and 1/2 t of corn screenings per calf.

Sample Ration #4 — Background Diets for Calves

	kg fed/day	lb fed/day
Dry hay — 15% protein	.5	1.1
Corn silage	7.5	16.5
Haylage	7.5	16.5
Corn	1.4	3
Supplement	0.2	.44
Premix	.03	1 oz
Feed conversion (DM basis)		8.67 lb

A 200-day feeding period for sample ration #4 would require about 1 1/2 t of corn silage and 1/2 t of haylage per calf.

Sample Ration #5 — Background Diets for Calves

	kg fed/day	lb Fed/ Day
Dry hay — 15% protein	0.5	1.1
Corn silage	10	22
High moisture corn (HMC) and cob meal	2.5	5.5
Corn gluten feed	2.4	5.3
Premix	.09	3 oz
Feed conversion (DM basis)		8.65 lb

A 200-day feeding period for sample ration #5 would require about 2 t of corn silage, 1/2 t of high moisture corn and cob meal and 1/2 t of corn gluten per calf.

TYPICAL BEEF FEEDLOT DIETS

High-energy feed, such as grain corn, is most often used in finishing diets, however, other feeds, generally in combination with corn or corn products, can also be used. The key is to ensure the ration is balanced to achieve your target rate of gain. Many feedlot operators aim for a gain of 100 lb/month or an average daily gain of 3 lb or better per animal. Listed below are a few sample feedlot rations to review.

Assumptions

- Backgrounding yearling diets (Rations #1 and #2): average daily gain (ADG) approximately 2.5 lb/day
- Finishing diets (Rations #3 to #8): average daily gain (ADG) approximately 3 lb/day
- Dry matter (DM) intake: approximately 2% of body weight for finishing diets

Sample Ration #1 –
Backgrounding diet (900-lb (408-kg) yearlings)

	kg fed/day	lb fed/day
Corn silage	15	33
HM corn + cob meal	3.5	7.7
Corn gluten	2	4.4
Mineral/salt — premix	.120	0.26

Sample Ration #2 –
Backgrounding diet (l,000-lb (454-kg) yearlings)

	kg fed/day	lb fed/day
Hay	1	2.2
Corn silage	14	30
Dry corn	5	11
Supplement/premix	0.6	1.3

Plus Salt

Sample Ration #3 –
Finishing Diet (1,250-lb (567-kg) steers)

	kg fed/day	lb fed/day
Hay	1	2.2
Corn	7	15.4
Barley	4	8.8
Wheat	1	2.2
Supplement/premix	0.7	1.5

Plus Salt

Sample Ration #4 –
Finishing Diet (1,300-lb (590-kg) heifers)

	kg fed/day	lb fed/day
Corn silage	8	17.6
Dry corn	3	6.6
HM corn & cob	8	17.6
Corn gluten	2	4.4

Plus Salt and Mineral

Sample Ration #5 –
Finishing Diet (1,200-lb (544-kg) steers/heifers)

	kg fed/day	lb fed/day
Dry corn	6	13.2
HM corn	6	13.2
Corn silage	4.5	9.9
Supplement	0.7	1.5

Plus Salt

Sample Ration #6 –
Finishing Diet (1,100-lb. (499-kg) steers)

	kg fed/day	lb fed/day
Dry corn	8	17.6
Barley	2	4.4
Alfalfa silage	2	4.4
Corn silage	2	4.4
Soybean meal	.5	1.1
Limestone	.07	.16
TM salt	.04	.09

Sample Ration #7 –
Finishing Diet (1,300-lb. (590-kg) heifers)

	kg fed/day	lb fed/day
HM corn and cob meal	6.8	15
Dry corn	5	11
Barley	2.3	5
Hay	0.9	2
Supplement	0.7	1.5

Plus Salt

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Sample Ration #8 –
Finishing Diet (1,250-lb (567-kg) steers)

	kg fed/day	lb fed/day
Dry corn	11.4	25
Hay	1.4	3
Supplement/premix	0.7	1.5

COST

Table 1, below, shows the cost of Ration #8 (High Corn Diet) calculated at three different corn prices.

Assumptions

- ADG: 3 lb/day
- Supplement: $350/t
- Dry hay: $100/t

TABLE 1

Corn Price	Total Daily Feed Cost	Total Feed Cost/ lb of Gain
$100/t	$1.50	50
$120/t	$1.74	58
$140/t	$1.98	66

The price of corn can have a huge impact on cost of gain. The other important factor that can influence the cost of gain is performance of cattle. Average daily gain (ADG) and feed efficiency, or feed conversion, are both good measures of performance. Factors affecting performance are:

- Ration: quality of feed and balanced for essential nutrients
- Environment: air quality, animal comfort and bunk space
- Quality of cattle: genetics, body condition and health

This Factsheet was authored by Dennis Martin, Beef Feedlot Specialist, OMAFRA, Clinton.

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